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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,617	01/10/2006	Christopher Beaugeant	2002P20605	4992

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EXAMINER
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CAI, WAYNE HUU

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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12/08/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,617	<b>Applicant(s)</b> BEAUGEANT ET AL.	
	<b>Examiner</b> WAYNE CAI	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed August 21, 2009 have been fully considered but they are not persuasive.

In response to applicant's argument that the Applicant's motivation is to reduce the delay and to improve the speech quality, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Examiner mainly relies on Chang for the teachings of most limitations recited in claim, except the "uplink data in compressed state". The Examiner only brings Dellien in for the teaching of "uplink data in compressed state". One skilled in the art would recognize that the data can be in various states, and because Chang does not expressly teach or suggest

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that the uplink data as taught by Chang is in compressed state; thus, it is reasonable to combine with the secondary reference to show that the data can be or is in the compressed state.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (hereinafter "Chang", US 2003/0133565) in view of Dellien et al. (hereinafter "Dellien", US 2002/0016161).

**Regarding claims 1 and 10**, Chang teaches or suggests a method for suppression (10) of echo ( $z(t)$ ) in uplink data ( $y(t)$  1216) coming from a terminal (2,3), with the original or a copy of the downlink data (12-16) (far-end speech from a speaker 121) and uplink data (19-21) (the echo is combined with near-end speech being analyzed to prepare for echo suppression (10) (the echo and near-end speech is combined to form the input to microphone 128), and with uplink data (19-21) being modified for echo reduction (10) using the results of the analysis (9) of the downlink data (12-16) and of the uplink data (19-21) (i.e., the digital input  $S(n)$ , which is the combination of near-end speech and echo, and the downlink signal is fed into the Adaptive Filter 124). Also, see paragraph 0005, fig. 1 & 5 and its descriptions.

Chang, however, does not expressly teach or suggest the uplink data is in compressed state.

In a similar endeavor, Dellien teaches or suggests method and apparatus for compression of speech encoded parameters. Dellien also teaches or suggest the uplink data is in compressed state (title, abstract and paragraph 0207).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine these references together.

The motivation/suggestion for doing so would have been to improve the throughput data rate.

**Regarding claim 2**, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests that the non-transcoded state represents the compressed encoding in which the uplink data was transmitted compressed over a mobile radio network (fig. 1 and its descriptions and paragraph 0207).

**Regarding claim 3**, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests that, before the analysis (9), the downlink data (12-16) and the uplink data (19-21) is decoded (18) partly or entirely from the transcoded state into a format representing the timing sequence of the signals representing the data (e.g. TDM) (fig. 1 & 5 and its descriptions. encoding/decoding process including ADC and DAC process).

**Regarding claim 4**, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests that a copy is made

(17a, 17b) of at least downlink data (12-16) to be sent in the direction of the terminal or the original of the downlink data is sent to the terminal, while the other downlink-data (original or copy) is used for encoding (18) and analysis (9) to make possible echo reduction (10) in the uplink data, with only either copy or original of the downlink data being decoded (i.e., both the far-end speech, and the near-end speech in combination with the echo is fed into the adaptive filter 124. Also, the far-end speech is decoded by the voice decoder 123).

**Regarding claim 5**, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests that the downlink data and the uplink data will be copied before the analysis (i.e., the echo and the near-end speech is combined and forwarded to the summer 126).

**Regarding claim 6**, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests during echo suppression (10) general knowledge of relationships between downlink data and required changes in uplink data is also taken into consideration for echo reduction on the uplink data using the results of the analysis (9) of the downlink data (the comparison between the uplink and downlink is made. See figures 1 & 5).

**Regarding claim 7**, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests that the terminal (2, 3) is a mobile radio terminal (fig. 3, smart phone 201).

**Regarding claim 8**, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests that the terminal is

a mobile radio terminal for a cellular mobile radio network (fig. 3 illustrates the communication between smart phone 201 and cellular network 202).

**Regarding claim 9**, Chang and Dellien teach and suggest all limitations recited within claims as described above. Even though the combination of Chang and Dellien do not expressly teach or suggest that the propagation delay caused by the partial decoding of the uplink stream is less than it would be with a complete decoding of the uplink stream, subsequent echo suppression and subsequent re-encoding. However, it is obvious and/or well known in the art that when the process of encoding and/or decoding is taking place, it takes some time to get this process done. Therefore, by partially decode the stream of data rather than fully or completely decode the stream of data. Clearly, that would reduce the amount of time to process the information. Thus, the propagation delay is also reduced.

The motivation/suggestion for doing so would have been to increase the throughput data rate.

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WAYNE CAI whose telephone number is (571)272-7798. The examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick N. Edouard/  
Supervisory Patent Examiner, Art Unit 2617

/Wayne Cai/  
Examiner, Art Unit 2617